1855MNRAS..16...26L

ern coasts of Australia, defines the line on which *Saturn* is rising. Between these two great circles the phenomenon may be seen.

"The limits which I have indicated do not include Bombay or Madras. But they include Calcutta and every British settlement east of Calcutta; especially Singapore, the coasts of China, and the whole of Australia.

"Perhaps the circulation of this notice, in the monthly publication of the Society, may induce some persons to watch for a phenomenon which at any time would be highly worthy of attention; but which, in reference to discussions now pending, might be one of very great interest.

"1855, *Dec.* 10."

Observations of the Zodiacal Light at Highfield House Observatory, near Nottingham. By E. J. Lowe, F.R.A.S.

"The following are observations which I had intended forwarding to the Society some months ago; they form the continuation of several reports upon this subject, which I have before had the honour to communicate. The chief interesting feature is *an inner* line of *brighter light* seen on the 25th of February, 1854. It has struck me that this line may be the edge of a ring, and in this case the zodiacal light will be *a ring of light* surrounding the sun, so inclined as to be in the same (or nearly) plane with the zodiac. I am aware that several eminent astronomers have seen weighty reasons why this should not be the case, and I therefore refrain from entering further into the subject at the present moment, and shall content myself with giving merely the observations themselves.

Epoch 1854, February 26^{d} 7^{h} 30^{m} G.M.T.

became very brilliant by impulses. ♉ 28°, altitude 45°, considerably brighter than the galaxy. Last night there was a brisk breeze, to-night calm. The phenomenon was faint at 7 o'clock; was still brilliant at 8 o'clock, the pulsations being strongly marked, and less bright at 8^{h} 15^{m}.

Epoch 1854, February 18^{d} 7^{h} 30^{m}

visible for a few minutes, the axis passed midway between α *Arietis* and the *Pleiades*.

Epoch 1854, February 25^{d} 7^{h} 30^{m}

scarcely perceptible.

Epoch 1854, February 25^{d} 7^{h} 33^{m}

very brilliant.

Epoch 1854, February 25^{d} 7^{h} 35^{m}

faint.

1855MNRAS..16...26L

Epoch 1854, February 25^{d} 7^{h} 45^{m}

time of greatest brilliancy. The pulsations of brightness more marked than I had ever before observed them, and at the times of maximum brightness, the phenomenon was altogether more brilliant than I had before seen it. The cone of light was *straight* along the northern edge, but decidedly *curved* on the southern edge.

Epoch 1854, February 25^{d} 8^{h} 0^{m}

The north edge cut the horizon 10° N. of W., and the south edge about 18° S. of W. If the N. edge were produced it would pass through γ *Piscium.* The axis cut the horizon 5° S. of W., the apex being at an altitude of 44°. The axis produced would pass 1° N. of the *Pleiades.*

Epoch 1854, February 25^{d} 7^{h} 45^{m} (continued).

At this time the position of the edges amongst the stars was noted. The cone passed S. of γ *Arietis* (but nearly touched that star at 7^{h} 40^{m}, and again at 8^{h} 0^{m}, yet only for a second or two). It mostly cut on the N. edge η *Piscium,* and on the S. edge ο *Piscium;* at times both these stars were *within* the cone of light distances varying from 15′ to 30′. The stars μ, ζ, ε, and δ *Piscium* (within the cone) were scarcely visible, and occasionally invisible. There was a line of light, more brilliant than any other portion of the phenomenon, which extended along the whole length of the cone to within 5° of the apex, being brightest at about the altitude of ε *Piscium.** The cone passed generally within 3° of γ *Pegasi,* yet occasionally within 1° of that star, whilst at times it was 4° distant from it. The zodiacal light was twice as brilliant as the brightest portions of the milky way; the latter, however, was not brilliant, although the night was very starlight. At 8^{h} 16^{m} a falling star, composed of a number of fragments, moved from γ *Pegasi* towards ε *Piscium,* and went out *exactly* as it touched the N. edge of the zodiacal light, leaving the impression that the phenomenon hid it from view; the meteor was only equal to a star of the fourth magnitude; stars of this magnitude were not visible *within* the cone of light.

Epoch 1854, March 1^{d} 7^{h} 30^{m}

faint, broader than on the 26th, yet more diffused, and the edges ill defined.

Epoch 1855, January 17^{d} 6^{h} 50^{m}

brilliant, and well defined near *Aquarius.* The N. edge cut ζ *Aquarii* and the S. edge τ *Aquarii;* the cone extended to the altitude of α *Andromedæ,* in the direction of the *Pleiades.*

Epoch 1855, February 12^{d} 7^{h} 0^{m}

magnificent; well marked on the edges; rose to about the altitude of α *Arietis,* pointing towards the *Pleiades.* The N. edge was 1° N. of β *Pegasi.*

---

* The author forwarded a sketch of the cone exhibiting the position of this line.—EDITOR.

1855MNRAS..16...28K

Epoch 1855, February 14^d 7^h 0^m

faint and confused.

Epoch 1855, February 17^d 7^h 0^m

olerably bright, yet confused, owing to a strong auroral glare.

Epoch 1855, March 7^d 7^h 50^m

very brilliant, tolerably steady in its light; N. edge sharp and well defined, passing immediately over γ *Arietis*, and covering η *Piscium*. S. edge confused. The apex extended to ζ *Arietis*.

Epoch 1855, March 18^d 7^h 30^m

bright but confused.

Description of an Out-of-doors Equatoreal Stand for Telescopes.

By the Rev. Samuel King, M.A.

"The accompanying photograph will give a general idea of the construction of this instrument, which is a modification of the parallactic ladder described in Admiral Smyth's invaluable *Cycle*. The chief novelty is the introduction of circles of right ascension and declination divided on slate.

"Upon a pier of brick-work, built in cement upon a substantial foundation, is placed a stone cube, having its northern edge chamfered off at an angle equal to the co-latitude. On this sloping face is securely fixed the brass socket or collar (with antagonist screws for adjustment) which carries the south pivot of the polar axis. The collar for the north pivot is sunk in a square block of mahogany, having strong brass cylindrical trunnions horizontally situated on opposite sides, the axes of which are in a line with the collar. These trunnions work in sockets formed for them in the top of each leg of the supporting shears;—the collar is thus brought to bear true upon the shoulder of the pivot in any position of the legs while roughly adjusting for altitude.

"The polar axis is a strong, double mortised, oblong frame, within which, and acted upon by a small double tackle, slides another frame, like a sash-window, carrying the cradle or trough, with Y's at either end, in which the telescope is securely fixed, so that the lines of the polar and declination axes intersect in its centre of gravity, and it balances accurately in every position.

"On the foot of the polar axis is fixed the slate hour-circle, 15 inches in diameter, divided on the limb with considerable accuracy (by means of a lathe with division-plate and index) to four minutes of time, allowing a very fair estimate to half a minute (without a vernier, which I intend some time adding). The declination circle, also of slate, is 12 inches diameter, divided to 30′.

"This apparatus has been exposed to all the vicissitudes of the weather for more than a year and a half, without requiring any